SHOP-MADE FRAME CLAMP

We developed the frame clamp shown here as an alternative to commercial clamps. It's made from four blocks connected with threaded rod. (You can buy the hardware locally. We're also offering the hardware and blocks in kit form, see page 24.)

CUT BLANKS. To make the four corner blocks, start by cutting three ¾"-thick blanks to a width of 3½" and length of 17". Next, cut a ½" dado, ½" deep down the center of *one* of the blanks. Then cut off four 4"-long pieces from each blank.

BUILD-UP BLOCKS. Since the threaded rods have to cross in the center when holding a frame (refer to Fig. 4), the dadoes on two of the blocks can't align with the dadoes on the other two blocks. So when I built up the corner blocks, I built two different sets of blocks, see Fig. 1.

To make the two blocks labelled "A", glue three pieces together so the piece with the dado is in the center, and the dado faces up, see Fig. 1. In the two blocks labelled "B", glue the dadoed piece on top with the dado facing down.

DRILL HOLES. The corners of the frame are held in place between two ½" x 4" dowel pegs on top of the blocks. To make the fixture so it holds both large and small frames, drill two holes close together and two more holes farther apart, see Fig. 2.

TUBING. Next, I cut 1"-long pieces of plastic tubing and slipped them over the dowels, see Fig. 2. The tubing protects the frame pieces when pressure is applied. If the tubing is moved high on the peg, it presses against the *top* of the frame to offset the pressure applied *below* the frame by the threaded rod.

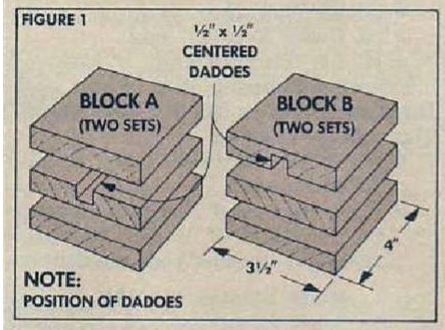
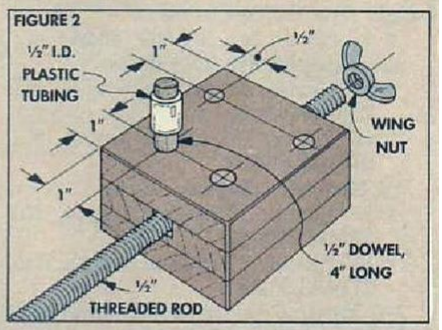
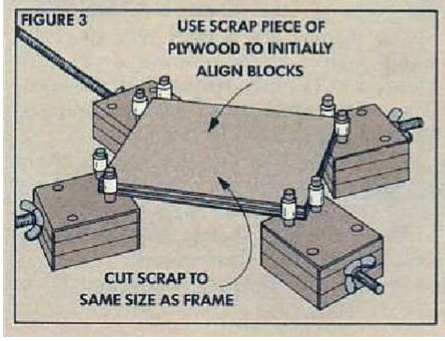
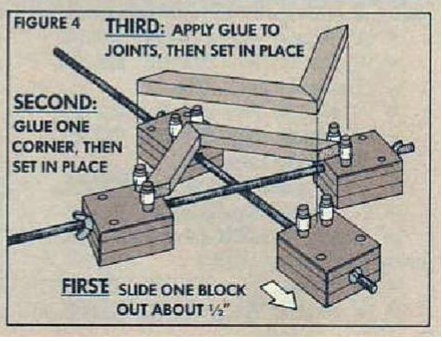
ASSEMBLY. Now assemble the fixture by slipping a 36"-long piece of ½" threaded rod through the dadoes. Then add wing nuts on both ends.

USING THE FIXTURE. To use the fixture, I always start by waxing the top of the blocks to keep the frame from sticking if any glue oozes out of the miter. Then lay the blocks down on a flat surface so the threaded rods cross each other in an "X". (Note: Unless the frame is square, the rods won't cross at 90°.)

SET UP WITH PLYWOOD. With this fixture, the pieces don't automatically align. It takes some jockeying around. I found that cutting a piece of scrap plywood the same size as the frame helps initially align the blocks, see Fig. 3.

Once the blocks fit tight around the plywood, loosen the wing nuts slightly (one turn each) and lift out the plywood. Then loosen one wing nut until it's backed off about ½" from the block, see Fig. 4.

GLUE UP FRAME. Now apply glue to the miters on two of the frame pieces. Then set this corner in place so it's *opposite* the loosened block. Next glue the remaining three corners and set the pieces in place. Now slide the "loose" block in and tighten all the wing nuts.

After everything is in place, check each corner of the frame to be sure the joints are tight. Don't overtighten. Just bring them together until the joint closes up.

One more thing. We found that this clamp works best for square frames or those that are close to square (5x7 and 8x10). It's harder to hold long, rectangular or odd-shaped frames tight in this clamp.